A4 CONT.

nucleic acid selected from the group consisting of nucleic acid encoding a CARD domain corresponding to amino acids 1373-1473 of SEQ ID NO:2 and a NB-ARC domain corresponding to amino acids 329-547 of SEQ ID NO:2.

REMARKS

By the present communication new claim 66 has been added, claims 1, 2, 8, and 38 have been amended, and claims 3 and 29 have been canceled to define Applicants' invention with greater particularity. No new matter is introduced by the subject amendments as all amended claim language is fully supported by the specification and original claims. For example, support for the term "complement" in claim 1 occurs at page 29, lines 6-25; for the phrase "high stringency conditions" occurs at page 33, line 8; for the CARD domain at page 12, lines 21-24; for the NB-ARC domain at page 6, lines 6-7; and for a 1035 nucleotide oligonucleotide fragment at p. 78, ln. 2.

The transfer of claim 28 from Group I to Group III is acknowledged.

It is respectfully submitted that the objection to claim 38 with respect to the phrase "modulating the level apoptosis" has been rendered moot by the amendment to claim 38 submitted herewith.

It is respectfully submitted that the rejection of claim 3 under 35 U.S.C. §112, second paragraph, as allegedly

indefinite has been rendered moot by the cancellation of claim 3 herein.

The rejection of claims 1-9, 11, 18, 27, 29 and 38 under 35 U.S.C. §112, first paragraph, as allegedly failing to enable one of skill in the art to make and use the invention commensurate with the scope of the claims is respectfully traversed. The Examiner acknowledges that the claims are enabled for:

> an isolated nucleic acid encoding a NB-ARC and CARD containing protein (NAC) selected from DNA encoding SEQ ID Nos:2, 4 or 6, and/or wherein said nucleic acid encodes biologically active NAC that is degenerate with respect to SEQ ID Nos:2, 4 or 6, and/or wherein said nucleic acid hybridizes under high stringency to the NAC coding portion of any of SEQ ID Nos.1, 3 and 5, and/or wherein said nucleic acid is the same sequence as set forth in SEQ ID Nos:1, 3 or 5, and/or wherein said nucleic acid is a cDNA, and/or a vector and/or recombinant cells containing said nucleic acid, and/or oligonucleotides at least 15 nucleotides in length that hybridize to SEQ ID Nos:1, 3 and 5, and/or said oligonucleotide labeled with a detectable marker, and/or a method for expressing NAC using said recombinant cells, and/or a method of identifying nucleic acids encoding a mammalian NAC using said oligonucleotides that hybridize under high stringency conditions, and/or single stranded DNA primers derived from nucleic acid sequences set forth in SEQ ID Nos:1, 3 and 5, and/or a method for modulating the level of apoptosis in a cell comprising introducing a NAC nucleic acid molecule into a cell and expressing said NAC in said cell, wherein said NAC modulates apoptosis, *in vitro*.

However, the Examiner alleges that the specification does not reasonably provide enablement for:

> a functional fragment of an isolated nucleic acid encoding NAC selected from DNA encoding SEQ ID Nos:2, 4 or 6, and/or further claim limitations set forth upon said functional fragment of said isolated nucleic acid, and/or DNA that hybridizes under moderately stringent conditions to an isolated nucleic acid encoding NAC selected from DNA encoding SEQ ID Nos:2, 4 or 6 and/or a method of modulating the level of apoptosis in a cell comprising introducing a nucleic acid molecule encoding any NAC, *in vivo*.

As set forth above, because the Examiner has acknowledged that the specification is enabled for "nucleic acid [that] hybridizes under high stringency to the NAC coding portion of any of SEQ ID Nos.1, 3 and 5," it is respectfully submitted that the Examiner's concern with respect to the phrase "moderately stringent conditions" in claim 1 has been rendered moot by the amendment of this phrase to "high stringency conditions."

Because the term "functional fragment" has been deleted from claim 1 herein, it is respectfully submitted that this concern has been rendered moot with respect to claim 1. New claim 66 has been added to depend on claim 1 and is directed to particular functional fragments identified in the specification. Accordingly, Applicants

respectfully disagree with the Examiner's assertion, at the paragraph bridging pgs. 7 and 8, that:

> The specification lacks any guidance for one of skill in the art to determine what region or fragment of said ORF is responsible for biological NAC activity. The specification fails to teach any functional fragment of the ORF of NAC. In view of the this lack of guidance, one of skill in the art would be unable to determine, without undue experimentation, what fragments of NAC are functional fragments.

New claim 66 is directed to a functional nucleic acid fragment, wherein said functional fragment comprises nucleic acid selected from the group consisting of nucleic acid encoding a CARD domain corresponding to amino acids 1373-1473 of SEQ ID NO:2 and a NB-ARC domain corresponding to amino acids 329-547 of SEQ ID NO:2. Contrary to the Examiner's above assertion, Applicant's specification at Examples 3.0, 4.0 and 5.0, teach functional fragments of the invention NAC proteins comprising a CARD domain and/or a NB-ARC domain.

Regarding claim 38 directed to modulating the level of apoptosis in a cell, Applicant respectfully disagrees with the Examiner's assertion, at p. 9, lns. 3-5, that:

> The specification fails to provide guidance to the skilled artisan on the parameters for gene delivery for the breadth of the claimed invention, namely on *in vivo* use.

Applicant's specification, at page 56, ln. 24 through page 59, ln. 24, provides extensive guidance to the those of skill in the art for achieving *in vivo* gene transfer. It is respectfully submitted that those of skill in the art, using the gene transfer methods described in Applicant's specification, would reasonably expect NAC expression in a cell at levels sufficient to modulate apoptosis as claimed. Nothing more is required. Accordingly, reconsideration and withdrawal of this rejection is respectfully requested.

The rejection of claims 1-9, 11, 18, 27 and 29 under 35 U.S.C. §112, first paragraph, as allegedly containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention, is respectfully traversed. As set forth above, it is respectfully submitted that the Examiner's concern with phrase "moderately stringent conditions" has been rendered moot by amending such phrase to "high stringency conditions."

Likewise, as set forth above it is respectfully submitted that the Examiner's concern with the phrase "functional fragment" has been rendered moot by the deletion of such phrase from claim 1. In addition, the specification, at Examples 3.0, 4.0 and 5.0 provide clear evidence that Applicant had possession, at the time the

application was file, of the functional fragments of new claim 66.' Accordingly, reconsideration and withdrawal of this rejection is respectfully requested.

The rejection of claims 2, 8, 9, 11, 27 and 29 under 35 U.S.C. §102(a), as allegedly anticipated by Nagase et al., is respectfully traversed. Applicant's invention, as defined by amended claims 2, 8, 9, 11 and 27, distinguishes over the 3,780 base pair and 2,789 base pair continuous nucleic acid fragments identified by Nagase et al., by requiring nucleic acid fragments no longer than 1035 nucleotides in length. Because each of the continuous sequences disclosed by Nagase et al. is longer than 1035 nucleotides, it is respectfully submitted that Nagase et al. does not anticipate Applicant's claims. Accordingly, reconsideration and withdrawal of this rejection is respectfully requested.

The rejection of claim 38 under 35 U.S.C. §102(b), as allegedly anticipated by Seshagiri and Miller, Curr. Biol., 7:445-460 (1997). Claim 38, as amended, distinguishes over Seshagiri by requiring "the NAC according to claim 1." It is respectfully submitted that because the NAC of claim 1 does not encompass CED-4, Seshagiri cannot anticipate claim 38. Accordingly, reconsideration and withdrawal of this rejection is respectfully requested.

CONCLUSION

In light of the Amendments and Remarks herein, Applicants submit that the claims are now in condition for allowance and respectfully request a notice to this effect. Should the Examiner have any questions, he/she is invited to call the undersigned attorney.

Respectfully submitted,

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Date

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